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International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : G02B 6/44	A2	(11) International Publication Number: WO 96/23239
		(43) International Publication Date: 1 August 1996 (01.08.96)

(21) International Application Number: PCT/US96/00974

(22) International Filing Date: 24 January 1996 (24.01.96)

(30) Priority Data:
08/377,366 24 January 1995 (24.01.95) US

(71) Applicant *(for all designated States except US)*: ALCATEL NA CABLE SYSTEMS, INC. [US/US]; 100 Penny Road, Claremont, NC 28610-0039 (US).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: YANG, Hou-Ching, M. [US/US]; Route 2, Box 574, Conover, NC 28613 (US). HOLDER, James, D. [US/US]; 404 Tangle Drive, Hickory, NC 28602 (US). MCNUTT, Christopher, W. [US/FR]; 121 bis, rue Leon-Desoyer, 78100 Saint-Germain-en-Laye (FR).

(74) Agent: VAN WINKLE, Peter, H.; Ware, Fressola, Van Der Sluys & Adolphson, Bradford Green, Building Five, 755 Main Street, P.O. Box 224, Monroe, CT 06468-0224 (US).

(81) Designated States: CN, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published
Without international search report and to be republished upon receipt of that report.

(54) Title: POLYPROPYLENE-POLYETHYLENE COPOLYMER BUFFER TUBES FOR OPTICAL FIBER CABLES AND METHOD FOR MAKING THE SAME

(57) Abstract

A buffer tube for an optical fiber cable is made from a polypropylene-polyethylene copolymer resin having nucleating agents and filler materials disbursed therein. The nucleating agents and filler materials improve compression-tension resistance and thermal expansion properties of the polypropylene-polyethylene copolymer buffer tube (32). A non-armored cable structure incorporates the present invention and is generally indicated by the numeral (30). This structure includes a single, large, gel-filled buffer tube (32) made of a polypropylene-polyethylene copolymer at least incorporating a nucleating agent. The gel in the buffer tube is a thixotropic, water-blockable gel. The gel-filled buffer tube (32) contains a plurality of optical fibers (34). Radial strength yarns (36), made from either aramid, polyethylene, polyester, or fiberglass materials, are contra-helically stranded around the buffer tube (32) and impregnated with filling compounds such as a petroleum based hot melt filling compound. Two metallic or dielectric strength members (38) are located 180 degrees apart on the outside of the radial strength yarns (36). A high strength rip cord (40) is applied over the radial strength yarns (36) to aid in sheath removal. A medium-density polyethylene (MDPE) outer jacket (42) encapsulates the strength members (38) and radial strength yarns (36) to complete the structure. The MDPE of jacket (42) may be filled with carbon black powder.